M/037/088

FAX TRANSMITTAL

STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

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Reply to Address:
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Division of Water Quality
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Salt Lake City, Utah 84114-4870

FROM: _____

AGENCY/FIRM: _____

PHONE #: _____

State of Utah
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Dennis Frederick
Environmental Engineer

TO: Tony ~~Grigos~~ Gallegos FAX #: 359-3940

AGENCY/FIRM: DOGM

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NUMBER OF PAGES TO FOLLOW: 4

SUBJECT: Summo - Rqd Issues

CONFIRMATION #: (801) 538-6146.
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State of Utah
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL

Michael O. Leavitt
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April 11, 1996

MEMORANDUM

TO: Dennis Frederick, Engineer
Division of Water Quality

Through: Loren Morton, Hydrologist
Division of Radiation Control

FROM: Dane Finerfrock, Section Manager
Division of Radiation Control

SUBJECT: Memo Regarding Summo Copper Mine, Lisbon Valley

Loren passed your memo on to me for our response. I will respond to each of your concerns separately, however, the situation you described is generally unregulated by the Division or the Nuclear Regulatory Commission, although naturally occurring radioactivity is involved. The Nuclear Regulatory Commission was not authorized by Congress to regulate natural radioactivity and the Division regulates only when there is a source of radium-226 in concentrations in excess of 15 picoCuries per gram and there is a sizable volume of contaminated wastes generated. Examples: large quantities of tailings from zirconium or beryllium ore beneficiation or the generation of phosphogypsum stacks. So, we are in something of a gray zone with respect to this situation.

1. Application of radioactive contaminated mine water could result in increasing soil concentrations. At some point, depending on application rates, mine water concentrations, type of radionuclides involved, facility life expectancy, erosion and mechanical dilution through mixing, etc.,it may be possible to exceed the 15 picocurie per gram licensing limit for radium-226.

2. The reuse of mine water as leach circuit makeup water, again, could result in increasing radionuclide concentrations in the water. Whether the concentrations could get high enough to

to cause a radiation exposure to employees is speculative. Drip or spray leaching could make a difference.

3. Upon decommissioning, the possibility exists that pipe scale and other processing equipment with a layer of scale or sludge may have elevated radionuclide concentrations, however the Division does not normally regulate these situations. However, if the company decides to scrap or surplus the facility equipment, the residual radioactive contaminants could exceed commonly accepted release criteria.

4. Ores are not regulated by the Division or the Nuclear Regulatory Commission. However if it is argued that these are tailings and there is large quantities, the Division may regulate if the concentration is in excess of 15 picoCuries per gram radium-226.

It appears that there is insufficient detailed information to conclusively determine if there should be any DRC involvement. Summo Mining's consultants should provide data regarding the radionuclides involved, their concentrations and process mass balance. Its possible that this type of operation has been conducted elsewhere and real world experience can resolve these questions.

State of Utah
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Don A. Ostler, P.E.
Director

Your Copy

MEMORANDUM

TO: Loren Morton, Geologist
Division of Radiation Control

THROUGH: Larry Mize, Manager
Ground Water Protection Section

FROM: Dennis Frederick, Engineer
Ground Water Protection Section

DATE: February 22, 1996

SUBJECT: Mine Water Containing Radioactive Isotopes at the Proposed Summo Copper Mine in Lisbon Valley, Southeastern Utah

Several issues have recently been raised concerning the use of water generated during the dewatering of the proposed Summo Copper Pit. Based upon verbal information provided by the company's consultant (Pat Gochnur - Gochnur and Associates), and the BLM's EIS consultant (Dave Nicholson - Woodward Clyde), water generated during the dewatering process will contain elevated levels of radioactive components. Summo has proposed using this water for process makeup water in their leaching circuit and for dust control at the mine and related facilities. The purpose of this memo is to ask the Division of Radiation Control for a determination if any of the resultant activities or wastes will require licensing or permit under the Radiation Control program or by the NRC. The following, is a list of potential issues we would like you to consider:

1. The application of the mine waste water will result in the concentration of radioactive isotopes/particles in the soils. Is there a point where the concentrations in the soil will result in the soils becoming a radioactive waste?

2. The use of the mine water, as leach circuit makeup water, will likely result in a net concentrating effect in the process water, such that the process water concentrations will exceed ambient mine water concentrations by a wide margin. Is the use of highly concentrated process waters a permit or licensing issue?

3. When the facility is decommissioned, will process pipelines, tanks, pond liners and other processing equipment be regulated in terms of disposal?

4. Will the leached subore on the leach pad be a potentially regulated radioactive mine waste?

Your advice and support to date on this matter is appreciated, as well as your willingness to aid us in the further evaluation of these issues. The purpose of this memo, and our request for a response, is to document the content of previous discussions such that we can proceed with our review of these issues based on a clear view of their regulatory context. Because of limited understanding of radiation control program authorities, standards, activities and precedents, it is difficult for us to judge the applicability of your program in this situation. Therefore, in your response, please provide us with a rationale for your determination concerning each of the above issues.

DF:wfm

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